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10EE836

Eighth Semester B.E. Degree Examination, June/July 2017
Renewable Energy Sources

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. List the differences between renewable and non-renewable energy sources. (08 Marks)
b. What are the advantages and limitations of renewable energy sources? (06 Marks)
c. Explain briefly the Indian Energy scenario. (06 Marks)
- 2 a. Define the following with respect to solar radiation:
(i) Latitude angle (ii) Altitude angle (iii) Hour angle (iv) Zenith angle
(v) Azimuth angle (10 Marks)
b. What is the difference between a pyrheliometer and pyranometers? With neat sketch, explain the working of Angstrom type pyreheliometer. (10 Marks)
- 3 a. With a neat diagram, explain the working principle of solar water heater. (08 Marks)
b. With a neat sketch, explain the working principle of solar still and solar furnace. (12 Marks)
- 4 a. With a neat sketch, explain the working of a solar pond electric power plant. (08 Marks)
b. What are the advantages and disadvantages of solar PV systems? (06 Marks)
c. With a neat sketch, explain any one type of thermal energy storage system. (06 Marks)

PART – B

- 5 a. With a suitable block diagram, explain the functions of different components of WECS. (10 Marks)
b. Classify the wind energy conversions system. (04 Marks)
c. Describe the main considerations in selecting a site for wind generators. (06 Marks)
- 6 a. With a neat diagram, explain the working principle of biogas plant. (10 Marks)
b. List & explain the factors affecting biogas generation. (10 Marks)
- 7 a. With a neat diagram, explain the principle of tidal power. (10 Marks)
b. With a neat diagram, explain the principle of ocean thermal energy conversion system. (10 Marks)
- 8 a. Describe the classification of fuel cells. (06 Marks)
b. Explain the principle of operation of an alkaline fuel cell. (08 Marks)
c. What are the advantages and disadvantages of hydrogen energy? (06 Marks)

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